

CHAPTER 2 – SOCIOECONOMIC INPUT DATA

INTRODUCTION

Socioeconomic data, which describes both demographic and economic characteristics of the region by transportation analysis zone (TAZ), is used as major input to SCAG's travel demand model. Travel demand analysis is based on the concept that travel is a derived demand of activity participation. Zonal demographic data, such as population, households, and income, is directly related to demand for activity participation of the area; economic characteristics, such as jobs by industry, are linked with supply of activity. This chapter provides definitions of the socioeconomic variables that are used by SCAG's Travel Demand Model, and the methodology used to estimate 2003 socioeconomic variables. The socioeconomic model inputs at the TAZ level were developed by SCAG's Growth Forecasting Staff. Summary statistics for each major variable by county are also provided.

SOCIOECONOMIC INPUT VARIABLES

This section describes the definition of socioeconomic data. SCAG's travel demand model uses 52 socioeconomic variables as model input. Those variables include population, households, school enrollments, household income, workers, and employment (or jobs). Each variable is provided by TAZ. The definition of each variable is described as follows:

Population (7 variables):

- Total Population: total number of people living within a zone, including all population types documented in the U.S. Census.
- Group Quarter Population: is primarily comprised of students residing in dormitories, military personnel living in barracks, and individuals staying in homeless shelters. Group quarter population does NOT include persons residing in institutions.
- Residential Population: the number of residents NOT living in "group quarters."
- Population by Age (4 variables): the number of population between 5 and 17 years old, 18 and 24, 25 and 64, and 65 or older.

Households (17 variables):

- Total Households: the number of total households.
- Households by Household Size (4 variables): the number of one-person households, two-person households, three-person households, and four or more person households.

- Households by Age of Household Head (4 variables): the number of households with age of household head between 18 and 24 years old, 25 and 44, 45 and 64, and 65 or older.
- Households by Number of Workers (4 variables): the number of households with no worker, with one worker, with two workers, and with three workers or more.
- Households by Household Income (4 variables): the number of households with annual household income (in 1999 dollars) below \$25K, \$25k-\$50k, \$50k-\$100K, and \$100K or more.

School Enrollment (2 variables):

- K-12 School Enrollment: the total number of K-12 (kindergarten through 12th grade) students enrolled in all public and private schools located within a zone. All elementary, middle (junior high), and high school students are included. This variable represents "students by place of attendance."
- College/University Enrollment: the total number of students enrolled in any public or private post-secondary school (college or university) that grant an associate degree or higher, located within a zone. This variable also represents "students by place of attendance."

Median Household Income (5 variables):

- Median Household Income is the median value of household income for all households within a zone. Household Income includes the income, from all sources, for all persons aged 15 years or older within a household. The median household income level is in "1999 dollars."
- Median Household Income by Income Categories (4 variables): median income for those households with median household income below \$25K, \$25k-\$50k, \$50k-\$100K, and \$100K or more.

Workers (4 variables):

- Total Workers: the total number of workers residing in a zone. Workers are counted by place of residence.
- Workers by Earnings (3 variables): the number of workers with earning below \$25K, \$25K-\$50K, and \$50K or more (in 1999 dollars).

Employment (17 variables):

The employment variables represent all jobs located within a zone (i.e., employment by place of work). Employment variable definitions are based upon North American Industry Classification System (NAICS) code definition.

- Total Employment: the total number of jobs within a zone.

- Employment by 13 Industries: the number of total jobs for 1) agriculture & mining, 2) construction, 3) manufacturing, 4) wholesale trade, 5) retail trade, 6) transportation, warehousing, and utility, 7) information, 8) financial activity, 9) professional and business services, 10) education and health services, 11) leisure and hospitality services, 12) other services, and 13) public administration.
- Employment by wage (3 variables): the number of employment with wage below \$25K, \$25K-\$50K, and \$50K or more (in 1999 dollars).

METHODOLOGY OF 2003 SOCIOECONOMIC VARIABLE ESTIMATE

The section summarizes the data sources and methodology for developing the three primary socioeconomic variables: population, households, and employment, at both local jurisdiction and small area levels. For more detailed information regarding socioeconomic variables estimation and forecast, please refer to the Technical Appendix of SCAG Regional Transportation Plan (Year 2004).

SCAG develops 2003 base year estimates of population and households at the local jurisdictional level based on California Department of Finance (DOF) E-5 Population and Housing Estimates. DOF local population and household estimates prepared for January 1st are adjusted to produce the mid-year population and household estimates. The local population and household estimates are derived using the housing unit method, which is the most commonly and widely used method in the nation. As a first step, administrative records of new housing construction and demolitions are used to estimate total housing unit changes during the base period. Then, the total housing units are converted to households (occupied housing units) using a vacancy rate. Households (occupied housing units) are converted to household population using average persons per household. Total population estimates are derived by adding group quarters population to estimated household population. Finally, the preliminary population and household estimates are finalized by controlling to the independently derived county estimates.

For 2003 employment estimates, SCAG estimates county-level total employment from two sources. First, wage and salary employment for each county is based on California Employment Development Department (EDD) 2005 Benchmark data. Second, SCAG staff calculates self-employment rates by each industry for each county by using 2000 Census Public Use Microdata Samples (PUMS) and Current Population Survey (CPS) Data.

To estimate employment at local jurisdiction level, SCAG uses 2000 Census for Transportation Planning Package (CTPP) part 2 data and SCAG population estimates. With the estimated county employment control for each industry, employment for local jurisdiction is calculated based on 2000-2003 population growth share of city to county for three population-serving industries (Education/Health Services, Other Services, and Public Administration), and 2000 city employment share to county (based on CTPP) for other industries.

The small area data at TAZ level is calculated based on the following input information:

- Jurisdiction level estimates describe above as control
- 2000 Census tract/block group data
- 2000 CTPP (Census for Transportation Planning Package) data
- Input and comments from local jurisdiction

INPUT DATA SUMMARY

The results presented in the following tables and figures summarize the socioeconomic data inputs to the Year 2003 Model Validation process. Table 2-1 presents a summary of socioeconomic data totals by county and for the SCAG Region. Figures 2-1 to 2-3 provides 2003 distribution for population density, employment density, and median household income.

Table 2-1

YEAR 2003 SCAG MODEL SOCIOECONOMIC INPUT DATA

POPULATION AND WORKERS				
COUNTY	RESIDENT POPULATION	GROUP QUARTERED POPULATION**	TOTAL POPULATION	RESIDENT WORKERS
Imperial	142,647	11,917	154,564	54,405
Los Angeles	9,846,198	183,786	10,029,984	4,024,830
Orange	2,951,175	44,495	2,995,670	1,385,731
Riverside	1,702,739	45,098	1,747,837	674,903
San Bernardino	1,828,843	47,264	1,876,107	717,695
Ventura	783,472	13,877	797,349	358,179
TOTAL	17,255,074	346,437	17,601,511	7,215,743

SCHOOL ENROLLMENT		
COUNTY	K THRU 12 ENROLLMENT	COLLEGE AND UNIVERSITY ENROLLMENT
Imperial	37,380	11,419
Los Angeles	2,104,364	747,161
Orange	582,863	248,703
Riverside	383,272	66,366
San Bernardino	440,633	123,473
Ventura	166,272	57,700
TOTAL	3,714,784	1,254,822

EMPLOYMENT				
COUNTY	RETAIL EMPLOYMENT	SERVICE EMPLOYMENT	OTHER EMPLOYMENT	TOTAL EMPLOYMENT
Imperial	7,173	16,016	32,365	55,554
Los Angeles	437,706	2,162,675	1,759,180	4,359,561
Orange	162,722	779,635	621,351	1,563,708
Riverside	75,147	282,496	231,796	589,439
San Bernardino	77,425	312,851	248,660	638,936
Ventura	37,721	146,287	150,481	334,489
TOTAL	797,894	3,699,960	3,043,833	7,541,687

HOUSEHOLDS					
COUNTY	LOW INCOME***	MEDIUM INCOME	HIGH INCOME	TOTAL	SIZE
Imperial	16,829	11,943	12,832	41,604	3.43
Los Angeles	942,654	863,624	1,369,727	3,176,005	3.10
Orange	166,020	234,648	562,732	963,400	3.06
Riverside	156,165	160,251	244,291	560,707	3.04
San Bernardino	157,411	161,524	234,639	553,574	3.30
Ventura	43,678	60,588	150,215	254,481	3.08
TOTAL	1,482,757	1,492,578	2,574,436	5,549,771	3.11

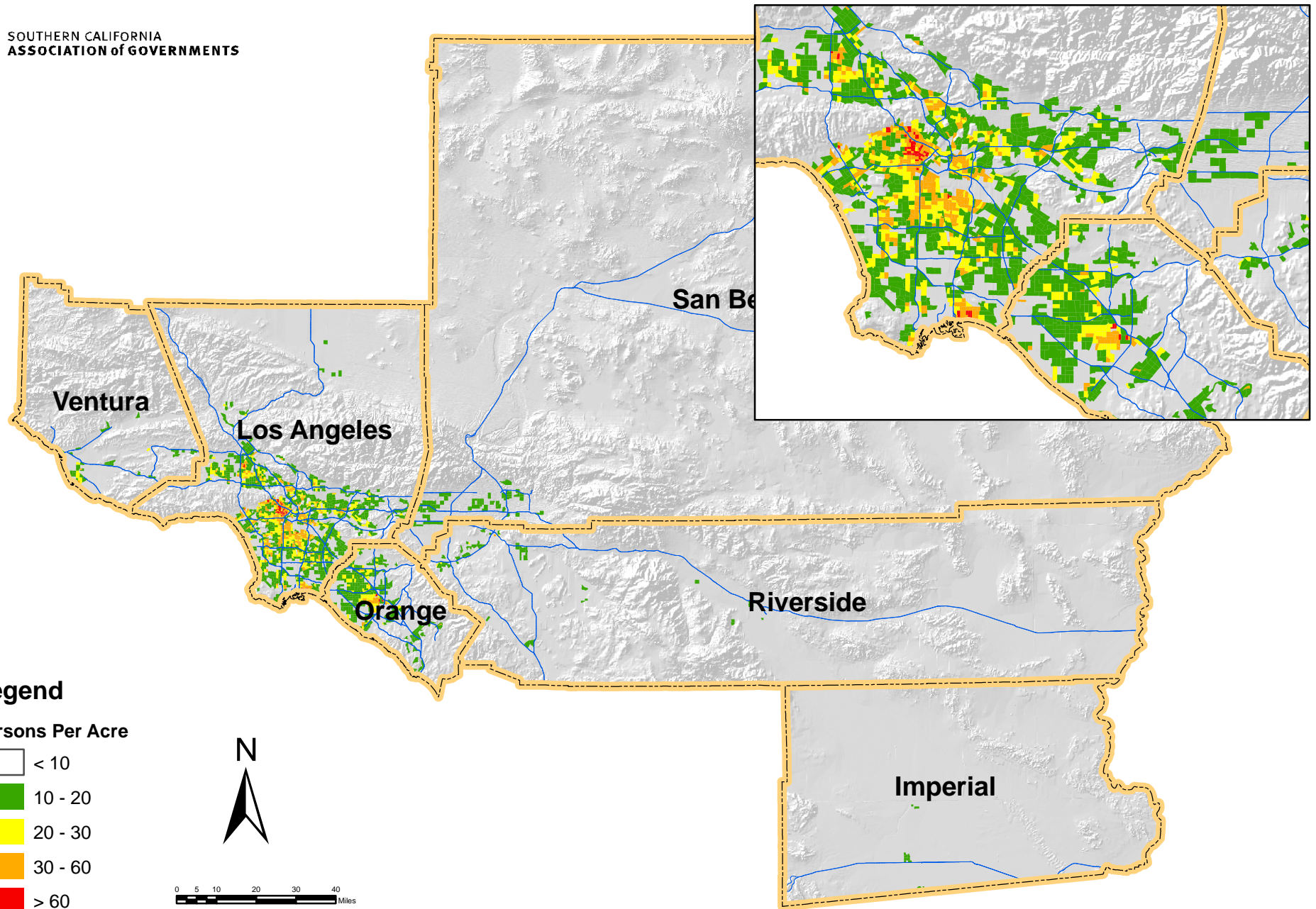


FIGURE 2-1
YEAR 2003 POPULATION DENSITY

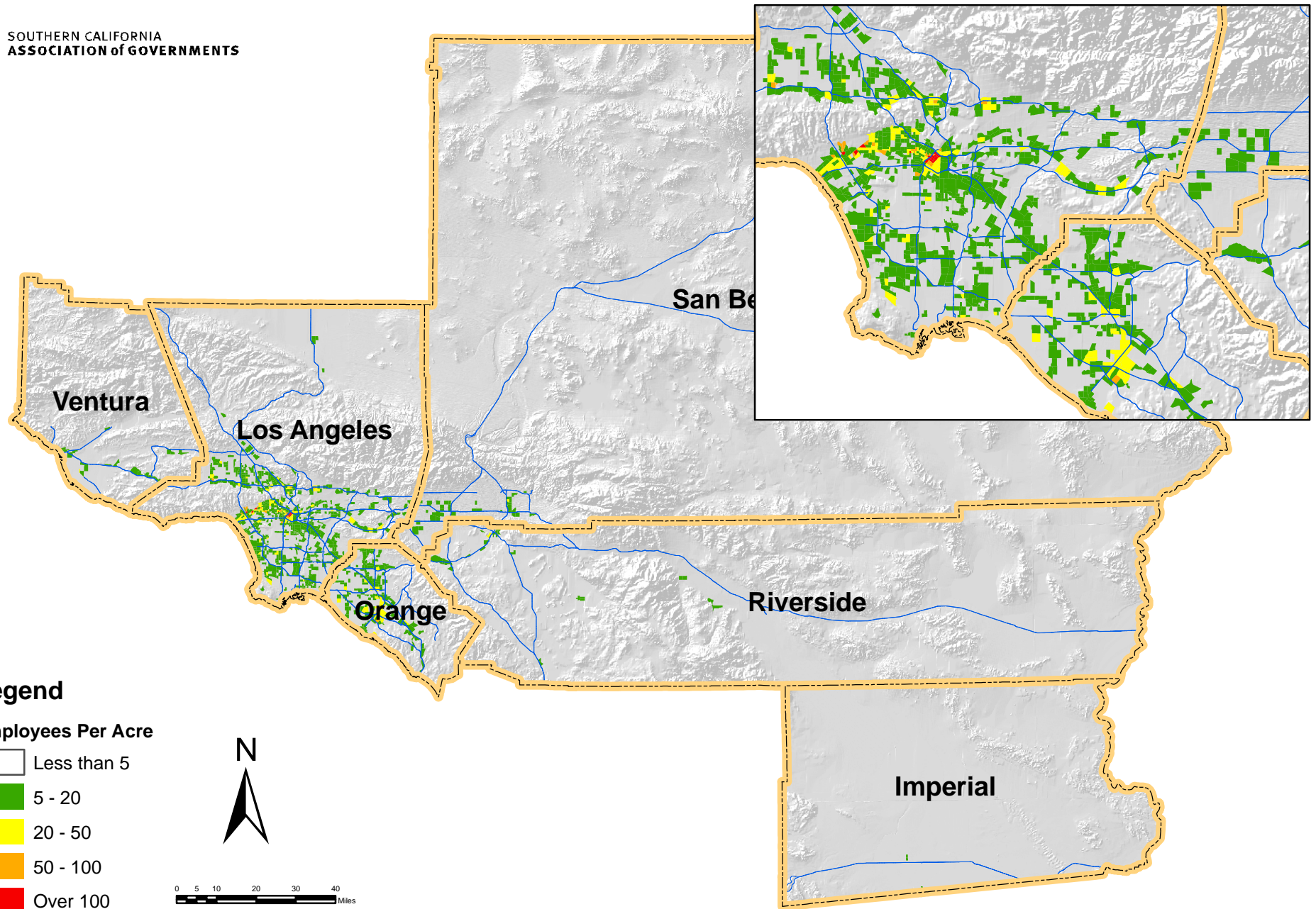


FIGURE 2-2
YEAR 2003 EMPLOYMENT DENSITY

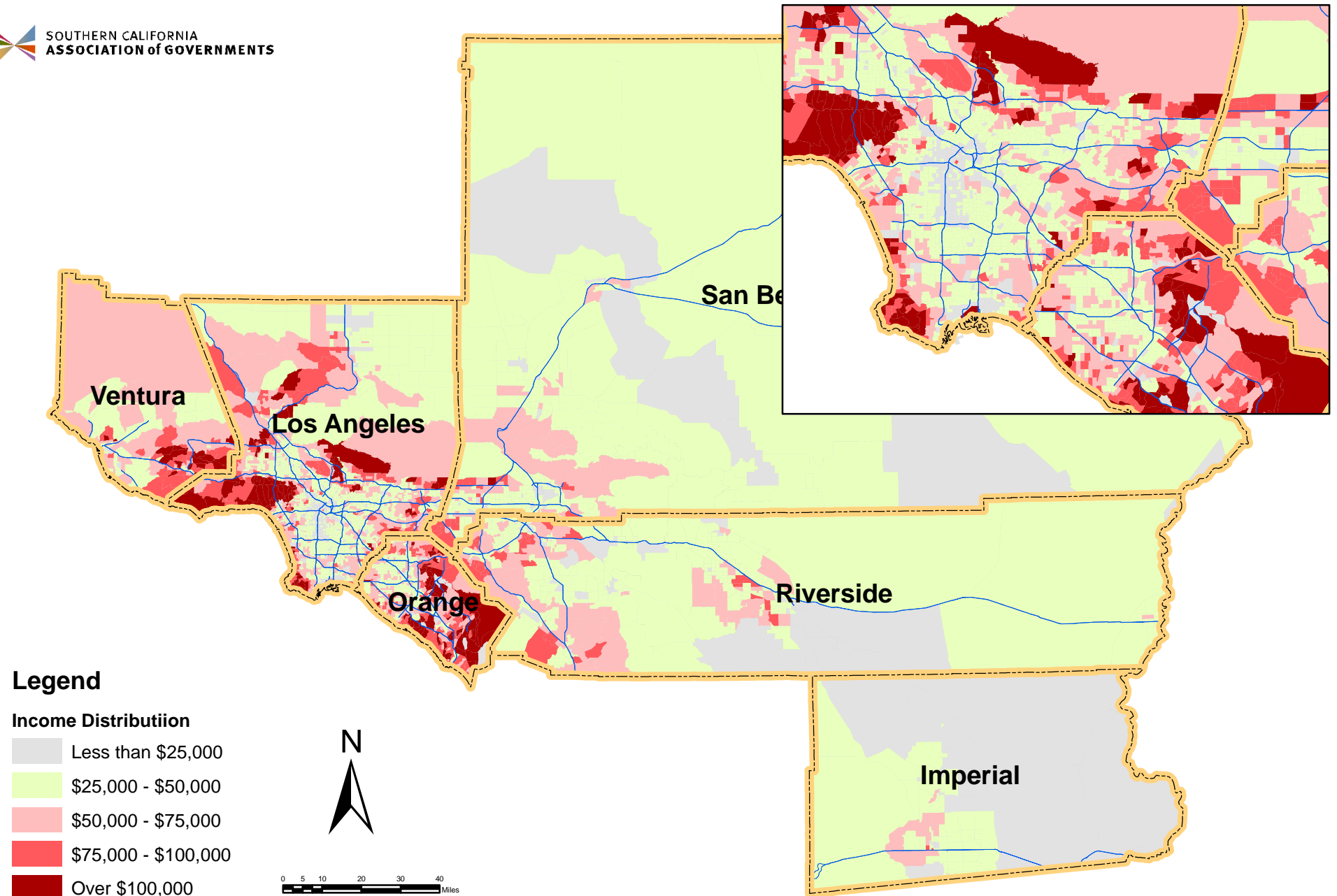


FIGURE 2-3
MEDIAN HOUSEHOLD INCOME IN 1999 DOLLAR